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SAT-1 -1415T/C POLYMORPHISM AND SUICIDAL BEHAVIOR

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Background: A growing interest in the potential role of polyamines in stress, mood disorders and suicidal behavior has recently emerged. In particular, the expression of polyamine´s rate-limiting catabolic enzyme (SAT-1, Spermidine/spermine N^1-acetyltransferase-1) may be reduced in ventral prefrontal cortex and posterior cyngulate gyrus of patients who committed suicide. However, there is some controversy regarding the involvement of potential cis-acting loci controlling SAT-1 gene expression (rs6526342 or rs17286006) in suicidal behavior. Moreover, a significant association between SAT-1 rs1960264 SNP and anxiety disorders has been found in a male caucasian spanish sample.

Methods: In order to test the potential association of SAT-1 -1415T/C SNP (rs1960264) with suicidal behavior, genotype frequencies for that SNP were compared between 193 suicidal attempters (126 female and 67 male) and 650 non-suicidal patients (314 female and 336 male) from an in-patient sample.

Results: We could not find a significant difference in the distribution of the genotypes for rs1960264 SNP between suicide attempters versus non-suicidal individuals (Linear-by-Linear association χ^2=0,203; df=1; P=0,652, females; Linear-by-Linear association χ^2=0,000; df=1; P=0,990, males). Neither could we demonstrate a relationship between rs1960264 genotype and past history of suicidal attempts (Linear-by-Linear association χ^2=2,966 ; df=1; P=0,085, females; Linear-by-Linear association χ^2=1,171; df=1; P=0,279, males).

Conclusions: Although we did not find a link between rs1960264 genotype and suicidal behavior, SAT-1 may be an interesting target to investigate the biology of this phenotype. Future studies should take into account other genetic polymorphisms at SAT-1, and definitively evaluate whether or not rs6526342 and rs1960264 have any functional implications.

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